TETRA TECH

January 17, 2017

Mr. Reed Miner
Montana Department of Environmental Quality
Petroleum Tank Cleanup Section
655 Timberwolf Parkway, Suite 3
Kalispell, Montana 59901-1215

Subject: Additional Corrective Action and Work Plan (CAP AC-07)
Missoula County Airport Car Wash Facility, Missoula, Montana
DEQ Facility ID# 32-01296, Release #3756, Work Plan 10396

Dear Mr. Miner:

Tetra Tech is pleased to submit this Corrective Action and Work Plan (CAP) for activities at the Missoula County Airport Carwash in Missoula, Montana (Site), Montana Department of Environmental Quality (DEQ) Facility I.D. No. 32-01296, Release #3756. Site location is provided on **Figure 1** (Attachment A).

This additional CAP is intended to fulfill the requirements as set forth in the letter from the DEQ September 6, 2016, *Additional Corrective Action and Work Plan Required for Petroleum Release at Missoula County Airport Carwash Facility* letter and several modifications requested by the DEQ during project discussions in December 2016 and January 2017.

The following sections provide our proposed scope of work and proposed time schedule. Referenced figures are presented in Attachment A. An estimated budget for completing the work tasks is included as Attachment B.

SCOPE OF WORK

In order to meet the requirements of the DEQ for this release, Tetra Tech proposes the following four tasks:

Task 1 – Additional Corrective Action Plan (CAP) Preparation and HASP Update

Activities associated with the preparation of this CAP are included in Task 1. These activities include correspondence with our client, the DEQ and the Petroleum Tank Release Compensation Board (PTRCB).

In order to comply with Occupation Safety and Health Administration Code of Federal Regulations (CFR) 29 1910.120, Tetra Tech routinely prepares a Health and Safety Plan (HASP) for projects that involve field investigation activities, especially for those projects where environmental contaminants may be encountered. All work at the site will be

Tetra Tech
2525 Palmer St, Suite 2
Missoula, Montana 59808
Tel 406.543.3045 Fax 406.543.3088 www.tetratech.com

conducted under an existing HASP which will be revised to include proposed work outlined in this document.

Task 2 – Borehole Drilling

Tetra Tech proposes to install up to five borings using direct-push technology at the locations indicated on **Figure 2**. Tetra Tech will coordinate buried utility locates using a one-call locating service prior to initiating intrusive activities. Tetra Tech will also discuss the proposed locations with representatives of the Missoula County Airport Authority knowledgeable about private utilities in the area. Well locations may be adjusted in the field due to buried utility locations.

Based on groundwater monitoring data obtained from site monitoring wells, we anticipate each borehole will be advanced to a maximum depth of 15 feet below grade. Continuous soil samples will be obtained from each borehole. Lithologic units encountered and visual and olfactory indications of petroleum hydrocarbon impacts will be recorded on logs completed for each borehole. A portion of each sample will be analyzed in the field for volatile organic compounds (VOCs) in headspace vapor using a calibrated photoionization detector (PID) following Tetra Tech's headspace screening method (on file with the DEQ). Headspace screening results will be recorded on borehole lithologic logs. Drill cuttings generated during drilling operations will be thin spread in an unpaved area of the site.

Up to two soil samples per borehole will be submitted to Eurofins Laboratories (Eurofins) in Lancaster, Pennsylvania for laboratory analysis of volatile petroleum hydrocarbons (VPH) in accordance with DEQ guidelines. Eurofins was chosen to conduct laboratory analyses for this project because 1) a local laboratory is not present in the area of the site or along the transit between the Tetra Tech Missoula office and the site and 2) Tetra Tech secured preferential pricing from Eurofins that offsets the cost for overnight delivery charges.

The soil sample from each borehole exhibiting the highest headspace concentration and the sample obtained from the air/groundwater interface will be submitted for laboratory analyses. In the event that field screening results do not indicate petroleum hydrocarbon impacts, then only the sample from the air/groundwater interface will be submitted for laboratory analysis.

Tetra Tech will also collect a grab sample of groundwater from each boring for potential VPH analysis. The groundwater sample obtained from the boring exhibiting the highest headspace screening results will be submitted to Eurofins for VPH analysis in accordance with DEQ guidelines.

Upon reaching the target depth, each borehole will be abandoned with drill cuttings and a minimum 1-foot thick cap of granular bentonite. The upper approximately 6 inches of each boring will be capped with asphaltic patch material.

Task 3 – Groundwater Monitoring

Tetra Tech will conduct one groundwater event at the site. All reusable, down-hole equipment will be decontaminated before monitoring each well. Groundwater monitoring observations and field data will be recorded on field forms.

Depth to water measurements will be obtained from four monitoring wells (MW-1R, MW-2, MW-3 and MW-4; **Figure 2**) using a decontaminated electric well probe prior to evacuation and sampling. Groundwater elevation data will be used to interpret groundwater flow direction and gradient at the site.

Groundwater samples will be obtained from wells MW-2 and MW-3. If possible, approximately three bore volumes of water will be evacuated from each well using a peristaltic pump and new disposable tubing. Field parameters including dissolved oxygen (DO), temperature, pH, specific conductance (SC), and oxidation/reduction potential (ORP) and will be measured periodically using electronic probes in an open vessel. Evacuation will continue until parameters for the individual wells stabilize. In the event a well is evacuated dry, the well will be allowed to recover for a period of time before the sample is collected. Evacuated water will be dispersed on paved surface proximate to each well.

Following parameters stabilization, groundwater samples will be obtained from wells MW-2 and MW-3, placed in vessels provided by the laboratory and preserved in accordance with the analytical method requirements. The sample vessels will be labeled, placed in coolers with ice, and shipped to a Eurofins for VPH analyses in accordance with DEQ guidelines. Water samples collected from each of the monitoring wells will also be analyzed in the field using a HACH® test kit for intrinsic biodegradation indicators (IBI) consisting of nitrate/nitrite, sulfate, ferrous iron and dissolved manganese. The IBIs will be used in conjunction with field parameters DO, ORP, pH and temperature to evaluate the occurrence of natural biodegradation at the site.

Task 4 – Project Management and Report Preparation

Following our receipt of laboratory analytical data, Tetra Tech will prepare a *Standardized Generic Applications Report* (AR-03) summarizing our methods and findings for the scope of work detailed above. Our report will include figures, field forms, summary data tables, and copies of laboratory analytical reports. The report will also include a map identifying the locations of all historic soil borings and monitoring wells and the location of past, current and pending infrastructures. The report will provide our estimate of the extent of impacted soil and our opinion on whether excavation remains the preferred remedial alternative to move the site to closure.

SCHEDULE

Monitoring well installation and groundwater monitoring is anticipated to be completed during late winter/early spring 2017. The turnaround time for laboratory analytical results of soil and groundwater samples is typically three weeks. The report will be prepared and submitted within 15 business days following our receipt of final laboratory data.

FEE

The estimated cost to complete the proposed scope of work is provided in **Attachment B**. as of this work plan, Tetra Tech only received bids from two qualified direct-push subcontractors; Northern Lights and WCEC. Their bids are included in Attachment B. Unit rates are based on the fiscal year 2016 fee schedule approved by the PTRCB. If the DEQ requires additional activities at the site, the project budget may require modification.

A copy of this work plan was also submitted to the PTRCB for their review and approval. If you have any questions regarding this project, please contact me at your earliest convenience at (406) 543-3045.

Respectfully Submitted:
Tetra Tech

Jerold A. Armstrong, L.G.
Project Manager

Attachments: A – Figures
B – Cost Estimate

cc w/ Attachments: Mr. Chris Jensen, Missoula County Airport Authority, Missoula, MT
Mr. Shaun Shay, Morrison-Maierle, Missoula, MT
Ms. Ann Root, PTRCB, Helena, MT

ATTACHMENT A

Figures

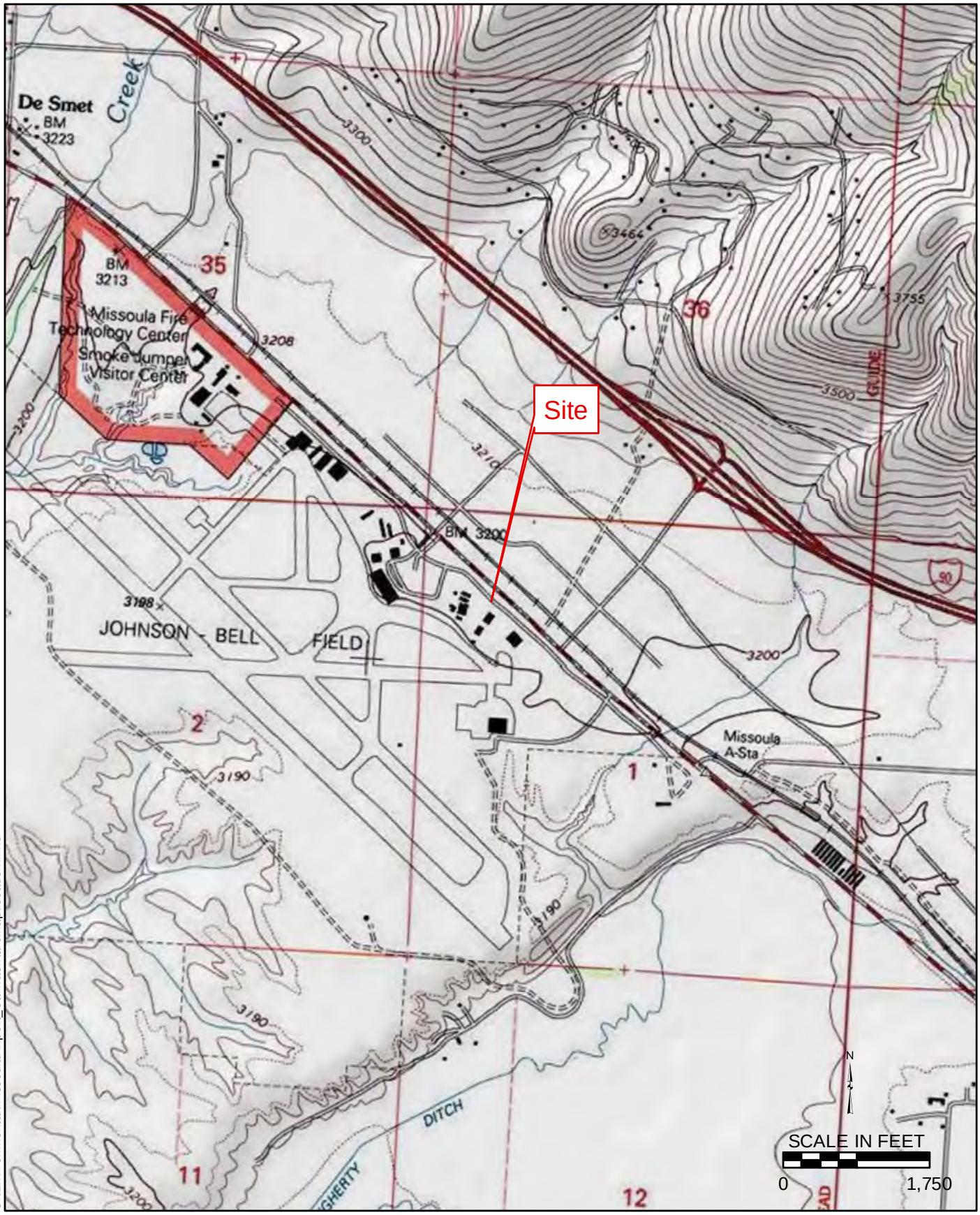

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Figure 1
Location Map
Missoula, Montana
Missoula Airport Car Wash

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SCALE IN FEET

0 20

- Existing Monitoring Well
- Proposed Geoprobe Borings
- Optional Geoprobe Borings
- 2003 Geoprobe Location
- 2004 Geoprobe Location
- Sewer
- Water

Site Map
Missoula Airport Car Wash
Missoula Montana

Figure 2

ATTACHMENT B

Cost Estimate and Subcontractor Bids

COST ESTIMATE

ADDITIONAL CORRECTIVE ACTION AND WORK PLAN

Missoula County Airport Car Wash Facility

DEQ Facility ID# 32-01296, Release #3756, Work Plan 10396

January 2017

TASK NO. 1: CORRECTIVE ACTION PLAN (CAP) PREPARATION AND HASP UPDATE

	RATE	UNITS	COST
Corrective Action Plan (CAP_AC-07)	$1,500.00	1	$1,500.00
Staff Scientist	$94.00	3	$282.00
		TOTAL TASK 1	**$1,782.00**

TASK 2: BOREHOLE DRILLING

	RATE	UNITS	COST
Labor			
Project Scientist	$115.36	18	$2,076.48
Other Direct Costs			
Geoprobe Subcontractor (Cost +7%)	$1,440.00	1	$1,440.00
VPH (soil), per sample	$58.00	10	$580.00
VPH (water), per sample	$58.00	1	$58.00
Miscellaneous (decon materials, disposable bailer, PPE, etc)	$100.00	1	$100.00
Shipping, estimate	$200.00	1	$200.00
		TOTAL TASK 2	**$4,454.48**

TASK 3: GROUNDWATER MONITORTING

	RATE	UNITS	COST
Groundwater Sampling, per well (2 wells)	$175.00	2	$350.00
Water Level Measurements, per well (MW-1R and MW-4)	$40.00	2	$80.00
VPH (groundwater), per sample	$58.00	2	$116.00
Groundwater Sampling Fee, per well	$10.00	2	$20.00
Shipping, estimate	$125.00	1	$125.00
		TOTAL TASK 3	**$691.00**

TASK NO. 4: PROJECT MANAGEMENT AND REPORTING

	RATE	UNITS	COST
Sr. Project Manager, per hr	$128.63	8	$1,029.04
Abbrev. Soil Boring & Monitoring Well Install Rpt (AR-03)	$2,455.00	1	$2,455.00
		TOTAL TASK 4	**$3,484.04**

TOTAL ESTIMATED COST	**$10,411.52**

Petroleum Tank Release Compensation Board
Soil Boring/Monitoring Well Installation Unit Cost Worksheet

Contractor Information

Company Name: WCEC

Address: 1030 South Ave W

City, State, Zip: Missoula, MT 59801

Cost Estimator: Jim Rolle Phone: (406) 549-8487

Signature: Digitally signed by Jim Rolle DN: cn=Jim Rolle, o=WCEC, ou=Director, Environmental Services / Regional Manager, email=jrolle@wcec.com, c=US Date: 2017.01.16 11:09:17 -07'00' Date: January 16, 2017

Project Information and Specifications

Site Name: Tetra Tech - Missoula International Airport

Address:

City:

Facility ID #

Release #

WP ID #

Type of Drilling Equipment

- ☐ Hollow-Stem Augers
- ☐ Air Rotary
- ☑ Direct Push
- ☐ Other (please specify)

Monitoring Well Specifications

Number of Wells

Surface: Concrete: ☐ Asphalt: ☐ Barren: ☐

Depth (per well)

Estimated Depth to Groundwater (ft)

Boring Diameter (inches) 2.25

Casing Diameter and type (inches)

Surface Completion: Flush Mount ☐ Aboveground ☐

Soil Boring

Number of Borings 5

Boring Diameter (inches) 2.25

Depth (per boring - ft) 15

Surface: Concrete: ☐ Asphalt: ☑ Barren: ☐

Soil Disposal: Onsite: ☑ Stockpile: ☐ Drums: ☐

Abandonment: Bentonite: ☑ Soil Cuttings: ☐

Soil Sampling

- ☑ Continuous Soil Sampling
- ☐ Interval Soil Sampling (specify interval)
- ☑ No Sampling

Cost Estimate Explanation:

(1) Mobilization/Demobilization: Includes all costs and mileage to transport equipment, materials, and personnel to and from the site location. More than one mobilization event of either the drilling rig or support vehicle will require justification and pre-approval by the DEQ-PTCS and Board staffs. This item should be estimated on a per mile unit rate.

(2) Soil Boring Installation: Includes all costs (labor, equipment, and materials) to drill, collect soil samples and abandon soil borings, as well as decontaminate equipment. Drilling costs should be estimated using a per foot unit rate. Unit cost should include handling of contaminated soil by stockpiling or placing in drums. Assume level "C" personal protective equipment.

(3) Monitoring Well Installation: Includes all costs (labor, equipment, and materials) to drill, collect soil samples, and complete monitoring well to specifications and according to Montana Well Drillers Board rules, as well as decontaminate equipment. Drilling costs should be estimated using a per foot unit rate. Unit cost should include handling of contaminated soil by stockpiling or placing in drums. Assume level "C" personal protective equipment.

(4) Drilling Standy: Drilling standby should be estimated on an hourly basis. Prior approval and justification for accumulating standby time is needed prior to billing.

(5) Well Development: Includes all costs (labor, equipment, and materials) to develop monitoring wells. This task should be estimated using a per well unit rate.

(6) Monitoring Well Abandonment: Includes all costs (labor, equipment, and materials) to properly abandon a well location according to the Montana Well Drillers Board rules. Abandonment costs should be estimated using a per well unit rate.

Soil Boring/Monitoring Well Installation Unit Cost Worksheet

TASK	UNIT COST	NUMBER OF UNITS	TOTAL COST
Mobilization/Demobilization [1]			
Mobilization/Demobilization: Drilling Rig	$11.00 /mile	18	$ $198.00
Mobilization/Demobilization: Support Vehicle	/mile		$ $0.00
Soil Boring Installation [2]			
Drilling (0'-50' range per boring)	$15.00 /foot	75	$ $1,125.00
Drilling (50'-100' range per boring)	/foot		$ $0.00
Other (please specify)			$ $0.00
Monitoring Well Installation [3]			
Drilling (0'-50' range per well)	/foot		$ $0.00
Drilling (50'-100' range per well)	/foot		$ $0.00
Other (please specify)			$ $0.00
Drilling Standby [4]			
-prior approval needed	/hour		$ $0.00
Well Development [5]			
Well Development	/well		$ $0.00
Monitoring Well Abandonment [6]			
Abandonment	/well		$ $0.00
Lodging may only be paid at actual costs when documented by receipts.			
Per Diem			
Lodging: (number of individuals) 1	$23.00 /person per day	1	$23.00
Food: (number of individuals)	$23.00 /person per day		$0.00
(Breakfast 5.00, Lunch 6.00, Dinner 12.00)			
		TOTAL PROJECT EXPENSE	$ $1,346.00

Additional Conditions/Comments/Costs:

Mobilization costs include a total of 2 hours of labor; 1 hour of premobilization / demobilization and 1 hour of total drive time from the WCEC Missoula office to the Missoula International Airport.

If you require assistance, call 406-444-9710.
Submit completed form to:
Petroleum Tank Release Compensation Board
PO Box 200902, Helena MT 59620-0902

Petroleum Tank Release Compensation Board
Soil Boring/Monitoring Well Installation Unit Cost Worksheet

Contractor Information

Company Name: Northern Lights Drilling LLC
Address: 1869 E Seltice Way # 332
City, State, Zip: Post Falls, ID 83854
Cost Estimator: JR Cantrall Phone: (208) 755-0699

Signature: [signature] Date: 1/10/17

Project Information and Specifications

Site Name: Missoula Airport
Address:
City: Missoula, MT

Facility ID #
Release #
WP ID #

Type of Drilling Equipment

- ☐ Hollow-Stem Augers
- ☐ Air Rotary
- ☒ Direct Push
- ☐ Other (please specify)

Monitoring Well Specifications

Number of Wells
Surface: Concrete: ☐ Asphalt: ☐ Barren: ☐
Depth (per well)
Estimated Depth to Groundwater (ft)
Boring Diameter (inches)
Casing Diameter and type (inches)
Surface Completion: Flush Mount ☐ Aboveground ☐

Soil Boring

Number of Borings 5
Boring Diameter (inches) 2.25"
Depth (per boring - ft) 15'
Surface: Concrete: ☐ Asphalt: ☐ Barren: ☐
Soil Disposal: Onsite: ☐ Stockpile: ☒ Drums: ☐
Abandonment: Bentonite: ☒ Soil Cuttings: ☐

Soil Sampling

- ☒ Continuous Soil Sampling
- ☐ Interval Soil Sampling (specify interval)
- ☐ No Sampling

Cost Estimate Explanation:

(1) Mobilization/Demobilization: Includes all costs and mileage to transport equipment, materials, and personnel to and from the site location. More than one mobilization event of either the drilling rig or support vehicle will require justification and pre-approval by the DEQ-PTCS and Board staffs. This item should be estimated on a per mile unit rate.

(2) Soil Boring Installation: Includes all costs (labor, equipment, and materials) to drill, collect soil samples and abandon soil borings, as well as decontaminate equipment. Drilling costs should be estimated using a per foot unit rate. Unit cost should include handling of contaminated soil by stockpiling or placing in drums. Assume level "C" personal protective equipment.

(3) Monitoring Well Installation: Includes all costs (labor, equipment, and materials) to drill, collect soil samples, and complete monitoring well to specifications and according to Montana Well Drillers Board rules, as well as decontaminate equipment. Drilling costs should be estimated using a per foot unit rate. Unit cost should include handling of contaminated soil by stockpiling or placing in drums. Assume level "C" personal protective equipment.

(4) Drilling Standy: Drilling standby should be estimated on an hourly basis. Prior approval and justification for accumulating standby time is needed prior to billing.

(5) Well Development: Includes all costs (labor, equipment, and materials) to develop monitoring wells. This task should be estimated using a per well unit rate.

(6) Monitoring Well Abandonment: Includes all costs (labor, equipment, and materials) to properly abandon a well location according to the Montana Well Drillers Board rules. Abandonment costs should be estimated using a per well unit rate.

Soil Boring/Monitoring Well Installation Unit Cost Worksheet

TASK	UNIT COST	NUMBER OF UNITS	TOTAL COST
Mobilization/Demobilization (1)			
Mobilization/Demobilization: Drilling Rig	1.50 /mile	346	$ 259.50 $0.00
Mobilization/Demobilization: Support Vehicle	/mile		$ $0.00
Soil Boring Installation (2)			
Drilling (0'-50' range per boring)	/foot		$ $0.00
Drilling (50'-100' range per boring)	/foot		$ $0.00
Other (please specify) 8 HR Day Rental	$1800.00	1	$ 1800.00 $0.00
Monitoring Well Installation (3)			
Drilling (0'-50' range per well)	/foot		$ $0.00
Drilling (50'-100' range per well)	/foot		$ $0.00
Other (please specify)			$ $0.00
Drilling Standby (4)			
-prior approval needed	/hour		$ $0.00
Well Development (5)			
Well Development	/well		$ $0.00
Monitoring Well Abandonment (6)			
Abandonment	$35.00 /well	5	$ 175 $0.00
Lodging may only be paid at actual costs when documented by receipts.			
Per Diem			
Lodging: (number of individuals) 1	115 /person per day	1	IF needed $0.00
Food: (number of individuals) 1	$23.00 /person per day	1	IF needed $0.00
(Breakfast 5.00, Lunch 6.00, Dinner 12.00)			
		TOTAL PROJECT EXPENSE	$ $0.00

A"ditional Conditions/Comments/Costs:

Additional costs may be incurred depending on site conditions (ie: Concrete Coring, Peristaltic Pump w/H20 Sample, Additional Borings, Dot Drums for IDW Storage, Any changes beyond original scope of 5 qty Soil Borings to 15' TD.)

If you require assistance, call 406-$$$"&%#".
Submit completed form to:
Petroleum Tank Release Compensation Board
PO Box 200902, Helena MT 59620-0902